# CHAPTER 2 - ALTERNATIVES

## 2.1 INTRODUCTION

This chapter describes continuing management guidance and the alternatives examined for the Resource Management Plan Amendment/Environmental Impact Statement (RMPA/EIS). Continuing management guidance refers to the direction provided by legislation, the Resource Management Plan (RMP), and other relevant authority on public land within the Planning Area that applies to all alternatives. The section on alternatives describes the range of alternatives developed to address resource concerns identified through scoping.

The alternative selected and documented in the RMPA will update existing management decisions that pertain to fluid minerals leasing and development in the previous RMP. Those public land resources and programs not addressed in this document will continue to be managed under the existing RMP and RMPAs, and as outlined in the section on continuing management guidance.

## 2.2 CONTINUING MANAGEMENT GUIDANCE AND ACTIONS

This section describes the existing resource management guidance and actions in BLM's Decision Area. It is based on the more detailed discussions in Section 3.0 of the Management Situation Analysis on file at the Las Cruces Field Office of the Bureau of Land Management (BLM).

Overall guidance is provided through regulations and other mandates, which are provided in Appendix A-I. The information that follows pertains to public land in the Planning Area.

### 2.2.1 Lands and Access

Within the Planning Area, approximately 2,042,311 acres of public land have been withdrawn in order to protect special uses or resources, or to ensure public safety (this acreage was calculated by adding the acreage managed by the Department of Defense [both withdrawn and acquired], National Park Service, Bureau of Reclamation, and public water reserves). These areas include the White Sands Missile Range, Holloman Air Force Base, McGregor Range, Bureau of Reclamation projects, Federal Aviation Administration land, and others. Decisions regarding fluid minerals leasing are addressed in the legal documents enabling the withdrawals and will be carried forward unchanged.

BLM is responsible for ensuring that mineral development on split estates (privately or State-owned surface area overlying Federally owned minerals) occurs in accordance with existing statutes and

regulatory requirements, and that National Environmental Policy Act (NEPA) documentation considers impacts on surface area in the event of mineral development.

Where the surface is privately owned, the operator (i.e., the person who has taken formal responsibility for the operations conducted on the leased land) is responsible for reaching agreement with the private surface owner. The agreement should establish the requirements for the protection of surface resources and/or damages. In areas where actions on private surface may affect the surface of adjacent Federal or Indian lands, BLM may request submission of the private agreement. If the agreement is not adequate to protect adjacent Federal or Indian lands, the area may require additional protective measures. However, construction standards or mitigation measures more stringent than those otherwise provided by applicable agency standards or plans would not be required. Each Application for Permit to Drill (APD) or other application to conduct other surface-disturbing activities needs to include the name and contact information of the private surface owner. As applicable, BLM would invite the surface owner to participate in any on-site inspection conducted. In the absence of an agreement, BLM may permit the operations provided the operator has complied with the provisions of the law and Federal regulations. Regardless, BLM will require a surface use plan for all operations, including those on private surface. Surface protection and restoration requirements will be included in the surface use plan even if the agreement between the surface owner and the operator is silent in this regard.

The operator is responsible for making access arrangements with the private surface owner prior to entry for purposes of surveying and staking a well site location and/or access road. The operator may be required to obtain any cultural resource or threatened and endangered species clearances that may be necessary. However, if the private surface owner objects to either an inventory or mitigation, a written statement to that effect should be obtained from the surface owner. Documentation regarding the lack of survey and mitigation would be submitted by the operator to the BLM or the appropriate surface-management agency. The operator should be aware that the inability to obtain permission to conduct a survey or mitigation does not relieve BLM or other surface-management agency from its responsibilities as required by NEPA, the National Historic Preservation Act, Endangered Species Act, or other applicable regulations. BLM still must be responsible for preparing environmental documentation and initiation of any consultation with appropriate State or Federal agencies, as necessary. Operators should be aware of the potential for delays in approval of projects if extended consultation is required.

A number of areas within BLM's Decision Area have been designated for specific public uses, and the management to sustain those uses will continue. Designated areas are as follows:

- The Cuchillo Mountains Piñon Nut Collection Area is located in the northwest portion of the Planning Area. The trees in this area are maintained in order to provide personal and commercial piñon nut collection (Decision R-2 in the 1986 RMP).

- Community Pit 7, a mineral material area for public use, is located on 80 acres in Otero County approximately 14 miles north of Orogrande. Sand may be extracted from the pit during the week; however, extraction activities are suspended on weekends because it is used as a staging area for motorcycle use in the nearby Red Sands Off-road Vehicle (ORV) Area.

- Personal sales of red building stone occur in the Green Canyon Common Use Area, on approximately 5 acres in Sierra County.

- Sand and gravel may be extracted from Apache Canyon in Sierra County, as long as the arroyo banks are not disturbed.

- Decision L-1 in the 1986 RMP places surface use restrictions in areas of public water reserves pursuant to Congressional statutes permitting certain public land withdrawals. Specifically, the smallest legal subdivision surrounding a spring or water hole, or land within .25 mile (400 meters) of a spring or water hole on unsurveyed land, must be withdrawn from settlement, location, sale, or entry in order to reserve public use of the water reserve.

- Decision L-2 in the 1986 RMP prohibits subsurface use of land that was used as an impact area on the former Air Force bombing and gunnery range until the restriction is removed (Public Land Order 2569).

- Under the Recreation and Public Purposes (R&PP) Act, BLM has the authority to lease or patent land to governmental and nonprofit entities for public parks, building sites, or other public purposes. The proposed rule for oil and gas leasing notes that R&PP lands may be subject to leasing under stipulations, if appropriate. However, existing management generally prohibits surface occupancy to any use other than the intended R&PP use to protect recreation and public purpose facilities.

In order to accommodate BLM's multiple-use responsibilities, access and roads will be provided to most of those public lands that currently have none. Generally, maintenance and easement acquisition are conducted in support of resource management objectives. Easements are acquired on a case-by-case basis. Public demand, administrative needs, resource values or conflicts, and availability of existing access are criteria that guide prioritization of areas for access development. Roads are constructed only when existing roads cannot be used or where off-road travel is not possible because of terrain.

All roads are constructed or maintained in accordance with the BLM New Mexico Road Policy. Specific road construction and maintenance standards are determined on a case-by-case basis dependent on resource management needs, user safety, impacts on environmental values, and construction and maintenance costs. The process is coordinated with adjacent landowners and permittees as appropriate.

Specific management direction associated with access is intended to protect unique resources or values where BLM determines it necessary. This pertains to controlling surface use by limiting ORV use to existing roads and trails or closing areas to ORV use completely. ORV use restrictions are described further in the discussion of recreation resources.

### 2.2.2 Minerals

Mineral activities in the Planning Area include geophysical exploration for hydrocarbons and geothermal resources, exploration for oil and gas via wells, exploration and development of locatable materials, and extraction of mineral materials. The BLM is responsible for ensuring that mineral development occurs in such a way as to minimize environmental damage and provide for the rehabilitation of affected land.

The prime management concern that may involve the other mineral resources is the need for saleable minerals such as sand and gravel, caliche, and fill material. Sand and gravel probably would be needed for access road and drill pad development. Should production be established, additional gravel and/or sand would be required at the supporting ancillary facilities. When possible, sales of mineral materials are made from designated community pits, which helps to keep surface disturbance on public lands to a minimum (BLM 1984).

### 2.2.3 Soils

Federal legislative acts that BLM generally must consider in addressing the management and protection of soils and prime farmland include the Federal Land Policy and Management Act of 1976 (FLPMA), Clean Water Act, Farmland Protection Policy Act of 1984, Executive Order 11752 (December 1973), Executive Order 11988 (May 1977), and Soil and Water Resources Conservation Act of 1977.

The general management objectives stated in the 1986 RMP for soil resources are to maintain productivity, minimize erosion, and stabilize the resources. Management activities in areas of high erosion potential are designed to minimize surface disturbance to the extent possible. In addition, areas of soil disturbance would be reclaimed. Management of soils within Sierra and Otero Counties include coordination with the related programs of State, local, and other Federal agencies.

Existing management decisions in the RMP specific to soils include the watershed areas that are listed in Table 2-1. The primary management objectives of the watershed areas are to improve watershed values by reducing peak runoff rates, reduce sediment yields, improve water quality, and receive better on-site, long-term use of runoff. In each case, ORV use is limited to existing roads and trails.

**TABLE 2-1**
**WATERSHED AREAS**

| RMP Decision | Description | Acres |
|---|---|---|
| W-1 | Wind and Chess Draw (Cornudas Mountain) | 34,499 |
| W-2 | Moccasin and Otto Draw (southwest of Piñon) | 13,662 |
| W-3 | East of Tularosa and south of Tularosa River | 17,046 |
| W-4 | Three Rivers (north of Tularosa) | 12,741 |
| W-5 | East of Crow Flats | 14,890 |

SOURCE: Bureau of Land Management 1986a, geographic information system database 1998
NOTE: Acres were calculated using current data in a geographic information system and may be different from acres published in the 1986 Resource Management Plan and subsequent *Federal Register* notice.

BLM is continuing erosion control work in specific areas in Otero County near Alamogordo, on the Batte, Virden, and Walker allotments. These projects involve creating frequent "gully-plugs" with heavy equipment along feeder drainages of major arroyos, beginning at the top of the watershed. This occurs in conjunction with chemical brush controls and grazing deferment. With this combination of management actions, large watershed areas are being improved.

### 2.2.4 Water Resources

Protection of water resources specific to fluid minerals development would be achieved through compliance with BLM regulatory requirements for onshore oil, gas, and geothermal operations. These regulations are discussed in Title 43 of the Code of Federal Regulations (CFR) Parts 3160 and 3162 and in the BLM Oil and Gas Adjudication Handbook 3203-1. Also, other regulations provide additional guidance as described below and in Appendix A-I.

Federal regulations regarding water resources are implemented and administered at the State level. The State of New Mexico establishes standards for State and interstate water bodies, assesses the quality of waters, adopts regulations, and develops programs and takes actions to protect and maintain water quality through the New Mexico Water Quality Control Commission (NMWQCC) New Mexico Office of the State Engineer (SEO), and New Mexico Oil and Gas Division (NMOGD) programs. Surface water flows are dictated primarily by existing water rights and irrigation requirements as administered by the SEO and U.S. Bureau of Reclamation.

The NMWQCC develops groundwater protection regulations and establishes standards for groundwater, assesses the quality of groundwater, and takes actions to protect and maintain groundwater quality. The comprehensive set of regulations is designed to protect all groundwater with total dissolved solids (TDS) concentrations of 10,000 milligrams per liter or less for present and potential future use as domestic and agricultural water supply (NMWQCC 1996). The general surface water standards are applicable at all times to all surface waters of the State, unless otherwise specified, and include site-specific standards for stream segments, including their designated uses for which the

water quality is to be maintained; numeric and narrative standards to sustain the uses; and specific numeric water quality standards for existing, attainable, and designated uses (NMWQCC 1996).

The principal mechanism regulating discharge to surface water, the Federal National Pollutant Discharge Elimination System permit, is administered by the NMWQCC on the delegated authority of the U.S. Environmental Protection Agency (EPA). Effluent regulations apply to specific discharges entering the public waters of the state, and in areas with only ephemeral streams or groundwater resources to protect water quality (40 CFR Part 133). In addition, stormwater discharge permits are required for construction activities disturbing 5 or more acres of land as covered under Section 402 (p) of the Clean Water Act.

Section 303(d) of the Clean Water Act requires states to identify waters that do not or are not expected to meet applicable water quality standards with technology-based controls alone. This identification of water-quality-limited waters is presented in a document called the 303(d) List, updated biennially. Once listed, the State is required to prioritize these waters, analyze the causes of the water quality problem, and allocate responsibility for controlling the pollution under a process known as the Total Maximum Daily Load process. This results in the determination of the amount of a specific pollutant that a water body or stream segment can receive without violating water quality standards and the apportionment to the different contributing sources of the pollutant loading. For a water-quality-limited stream segment that requires a total maximum daily load, the State must quantify the pollutant sources and allocate allowable loads to the contributing sources, both point and nonpoint, so that the water quality standards can be attained for that segment (New Mexico Environment Department 1998).

As of 1996, 47 numeric groundwater quality standards for various compounds had been adopted. In addition to the numeric standards, it is required that approximately 87 listed toxic pollutants not be present in concentrations which would create a lifetime risk of more than one cancer per 100,000 exposed persons at a place of present or reasonably foreseeable future use (NMWQCC 1996).

Also, New Mexico has received delegated authority from the EPA to implement, at the State level, the wastewater revolving loan program of the Clean Water Act (33 USC 1288), hazardous waste underground injection control (UIC), and public water supply programs of the Safe Drinking Water Act, and hazardous waste management and State underground storage tank programs of the Federal Resource Conservation and Recovery Act (RCRA). Other Federal programs such as Superfund, the uranium mill tailings programs, and the Waste Isolation Pilot Plant, are programs in which the State plays a role (NMWQCC 1996).

Section 319 of the Clean Water Act is a nonpoint source management program that allows states to establish projects for improving water quality with respect to nonpoint sources. No regulatory mechanism exists for implementation of this program.

Because so many activities may affect water quality, the New Mexico Water Quality Act (Chapter 74, Article 6 NMSA 1978) is one of numerous State laws involved in water quality protection. Other relevant legislation includes the Utility Operators Certification Act, Wastewater Facility Construction Loan Act, Oil and Gas Act, Environmental Improvement Act, Solid Waste Act, Hazardous Waste Act, Mining Act, and several laws giving authority to local governments to regulate water quality (NMWQCC 1996).

Groundwater is the major water source for livestock within the Planning Area, and currently the trend is to conserve more groundwater for future needs than is currently necessary. Water rights for the use of underground water in the State are administered by the SEO. Rules and regulations governing drilling of wells and appropriation and use of groundwater in New Mexico were formulated for the purpose of carrying out the provisions of the statutes governing underground waters and describing the present extent of all declared underground water basins in New Mexico. An application to appropriate groundwater within declared basins must be filed with, and a permit obtained from, the SEO. Wells may be drilled and groundwater appropriated outside of the boundaries of declared underground basins (in undeclared underground basins) for beneficial use within the State without the appropriator making application to the SEO subject only to prior and existing rights within such areas (SEO 1995).

To ensure orderly development of groundwater resources within the Tularosa Declared Basin, the Water Rights Division of the New Mexico SEO developed administrative criteria for a basin sub-area, which were adopted by the SEO in May of 1997. At present, most pending well applications are located near Alamogordo and Tularosa. The criteria provide administrative guidelines for processing water rights applications within that sub-area. Because of the high level of TDS in the basin, groundwater applications would be evaluated for their impact on dissolved solids as well as for their impact on water supplies. Applications outside the sub-area would be considered on a case-by-case basis. Further information can be obtained from the SEO Water Rights Division (SEO 1999b).

The SEO Water Rights Division has no jurisdiction on the undeclared basin in Otero County. Water is not appropriated and a well permit is not required to drill a water well in the undeclared basin. The area is regarded as low priority with the Water Rights Division because it is sparsely populated and few complaints have been filed regarding water issues (SEO 1999b).

Use of surface waters also requires water rights permitting, which is handled through the SEO under New Mexico Statutes 1978, Chapter 72, Water Law.

In oil, gas, and geothermal drilling programs, disposal UIC wells are designed for “well injection” of wastewater and are subject to the permitting and regulatory control provisions of the Federal Safe Drinking Water Act’s Underground Injection Control Program (40 CFR Parts 144 and 146.22) (40 CFR Parts 100 to 149, July 1, 1991 revision). A UIC permit from the NMOGD is required prior to drilling a new injection well. Injection pressures and volumes are monitored to ensure that potable aquifers are not affected adversely by injection of produced water. UIC-described practices are used

to protect against potential cross-contamination of groundwater supply aquifers from disposal wells. These described practices include well construction (e.g., entire well bore cased and cemented), restrictions on injection pressures, completion of mechanical integrity testing, and completion of detailed monitoring of produced and injected water volumes.

### 2.2.5 Air Quality and Meteorology

All BLM actions and use authorizations must comply with all applicable local, State, tribal, and Federal air quality law, statutes, regulations, standards, and implementation plans. Prior to implementation, all BLM-initiated or authorized activities within nonattainment areas must undergo a review and determination (when applicable) to determine conformity with the National Ambient Air Quality Standards, per 40 CFR part 93.150 et al. If the standards are being met, the area is designated as attainment, and if the status of attainment has not been verified through data collection, the area is unclassified. For permitting purposes, an unclassified area is treated as an attainment area. Sierra and Otero Counties are currently classified as in attainment with all State and Federal air quality regulations.

### 2.2.6 Noise

Noise-sensitive receptors are land uses associated with indoor and/or outdoor activities that may be subject to stress and/or significant interference from noise. They often include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, educational facilities, recreational areas, and habitats of noise-sensitive wildlife species. An appropriate noise environment is necessary to prevent activity interference and annoyance.

There currently is no specific Federal, State, or local legislation that provides quantitative requirements for land use compatibility with noise sources within the Planning Area; however, all BLM actions and use authorizations must comply with applicable Federal regulations and guidelines described as follows.

The Noise Control Act of 1972 (PL 92-574) established a National policy "to promote an environment for all Americans free from noise that jeopardizes their public health and welfare." The Act provides for a division of powers between Federal, State, and local government, in which the primary Federal responsibility is for noise source emission control, with the states and other agencies retaining the rights to control noise sources and the level of noise within their communities and jurisdictions. Military aircraft are exempt from the requirements of this Act.

The EPA has published acoustical guidelines designed to protect public health and welfare with an adequate margin of safety. In the absence of State or local noise standards, the EPA guidelines (Table 2-2) serve as useful tools to assess the significance of an impact that may result from a source. Table 2-2 classifies the various areas according to the primary activities that are most likely to occur in each.

A review of the table shows that an indoor noise environment of 45 day-night sound level (Ldn) permits speech communication in homes, while an outdoor Ldn not exceeding 55 decibels (dB) permits normal speech communication. An equivalent sound level ($Leq_{(24)}$) of 70 dB is identified as protecting against damage to hearing.

**TABLE 2-2**
**YEARLY AVERAGE* EQUIVALENT SOUND LEVELS IDENTIFIED AS REQUISITE TO PROTECT THE PUBLIC HEALTH AND WELFARE WITH AN ADEQUATE MARGIN OF SAFETY**

| | Measure | Indoor | | | Outdoor | | |
|---|---|---|---|---|---|---|---|
| | | Activity Interference | Hearing Loss Consideration | To Protect Against Both Effects[b] | Activity Interference | Hearing Loss Consideration | To Protect Against Both Effects[b] |
| Residential with outside space and farm residences | Ldn | 45 | | 45 | 55 | | 55 |
| | $Leq_{(24)}$ | | 70 | | | 70 | |
| Residential with no outside space | Ldn | 45 | | 45 | | | |
| | $Leq_{(24)}$ | | 70 | | | | |
| Commercial | $Leq_{(24)}$ | [a] | 70 | 70[c] | [a] | 70 | 70[c] |
| Inside transportation | $Leq_{(24)}$ | [a] | 70 | [a] | | | |
| Industrial | $Leq_{(24)}$[d] | [a] | 70 | 70[c] | [a] | 70 | 70[c] |
| Hospitals | Ldn | 45 | | 45 | 55 | | 55 |
| | $Leq_{(24)}$ | | 70 | | | 70 | |
| Educational | $Leq_{(24)}$ | 45 | | 45 | 55 | | 55 |
| | $Leq_{(24)}$[d] | | 70 | | | 70 | |
| Recreational areas | $Leq_{(24)}$ | [a] | 70 | 70[c] | [a] | 70 | 70[c] |
| Farm land and general unpopulated land | $Leq_{(24)}$ | | | | [a] | 70 | 70[c] |

SOURCE: U.S. Environmental Protection Agency, March 1974

NOTES:

Explanation of identified level for hearing loss: the exposure period that results in hearing loss at the identified level is a period of 40 years.

* Refers to energy rather than arithmetic averages.

(a) Since different types of activities appear to have been associated with different levels, identification of a maximum level for activity interference may be difficult except in those circumstances where speech communication is a critical activity.

(b) Based on lowest level.

(c) Based only on hearing loss.

(d) An $Leq_{(8)}$ of 75 dB may be identified in these situations so long as the exposure over the remaining 16 hours per day is low enough to result in a negligible contribution to the 24-hour average; i.e., no greater than an equivalent sound level of 60 dB.

In some cases, Federally threatened and endangered wildlife species may be affected by elevated noise levels. High noise levels potentially can mask communications by wildlife that are used to attract mates and defend territories. No specific noise control requirements are available for wildlife species within the Planning Area.

The State of New Mexico and Sierra and Otero Counties do not have quantitative requirements for assessing the compatibility of a noise source with a land use.

### 2.2.7 Vegetation

The BLM is responsible for management and protection of vegetation that occurs on public land. A number of areas within BLM's Decision Area have been recognized as important vegetation communities or as ecological study plots. The 1986 RMP imposes a stipulation of no surface occupancy for the study plots, including Engle, Cuchillo, Nordstrom, Lee, Trujillo, and Danley.

The Cuchillo Mountains Piñon Nut Collection Area is located within the northwestern portion of the Planning Area. The trees in this area are maintained in order to provide personal and commercial piñon nut collections (Decision R-2 in the 1986 RMP).

The existing management measures that have been stipulated to improve vegetation and control noxious weeds include brush control, grazing deferment, erosion control, and prescribed burns.

Management of noxious weeds is directed by the Carlson-Foley Act of 1968, which directs agencies to destroy noxious weeds, and the Federal Noxious Weed Act of 1974 as amended, which requires agencies to (1) have an office or person trained to coordinate an undesirable plant management program, (2) adequately fund the program, and (3) conduct Integrated Weed Management. Also, BLM has entered into cooperative agreements with both Sierra and Otero Counties for the control of noxious weeds.

Instruction Memorandum 99-178 instructs BLM to make changes to the list of Critical Elements of the Human Environment in BLM's NEPA handbook. Moreover, Executive Order 13112, Invasive Species, directs Federal agencies to restrict activities that facilitate the spread of such species. One of the new elements added to this list is invasive non-native species in order to require that these species, especially weeds, will be given thorough consideration in all NEPA documents.

### 2.2.8 Wildlife and Fisheries

BLM is responsible for the balanced management of public land and resources and their associated values. Fish and wildlife are designated major public land uses, and therefore are managed by the BLM. The objectives of BLM's wildlife management program are to ensure optimum populations and a natural abundance and diversity of fish and wildlife values by restoring, maintaining, and enhancing habitat conditions (BLM 1987).

The 1986 RMP provides guidance in the form of land use allocations. Site-specific management of fish and wildlife habitat occurs through habitat management plans. According to FLPMA and Department of the Interior policy (43 CFR Part 24.4), BLM is primarily a habitat manager.

Issues involving the management of resident fish and wildlife species (with the exception of migratory birds and endangered species) are managed by the State agencies with responsibilities for them. Existing wildlife management direction is shown in Table 2-3. The BLM works closely with the New Mexico Department of Game and Fish (NMDGF) to develop and implement habitat management plans, plan hunting strategies, and mitigate or avoid the impacts of BLM actions. Interagency coordination between BLM and NMDGF is accomplished through a Master Memorandum of Understanding that sets forth responsibilities for coordination, identifies issues of concern, and establishes methods of coordination.

**TABLE 2-3**
**EXISTING WILDLIFE MANAGEMENT DIRECTION**

| RMP Decision | Area/Concern | Description | Decision |
|---|---|---|---|
| WL-2 | Percha Creek Riparian Habitat Area | Protect riparian area (940 acres) for wildlife habitat, watershed values, recreation, and visual quality. | Limits ORV use to existing roads and trails. |
| WL-4 | Otero Mesa Habitat Management Plan (Otero Mesa Habitat Area) | Provide adequate habitat for pronghorn (427,275 acres). | |
| WL-5 | Caballo Mountain Habitat Management Plan (Caballo Mountain Deer Area) | Provide adequate habitat for mule deer (93,179 acres). | |
| WL-6 | Sacramento Escarpment Habitat Management Plan (Sacramento Mountains Deer Area) | Provide adequate habitat for mule deer (170,275 acres). | |
| WL-8 | Jornada del Muerto Habitat Management Plan and Nutt Area (Nutt and White Sands Antelope Areas) | Improve habitat and population size for pronghorn on the Jornada del Muerto (453,709 acres) and in the grasslands near Nutt, New Mexico (75,850 acres). | |
| ACEC | Three Rivers Petroglyph Site (1,130 acres). | RMP general management guidance; there are no specific decisions regarding the management of wildlife resources. | Closed to leasing |
| ACEC | Sacramento Escarpment (5,365 acres) | RMP general management guidance; manage big game habitat and compliance with special status species law and policy. | Closed to leasing |
| ACEC | Alkali Lakes (6,903 acres) | RMP general management guidance | Closed to leasing |
| ACEC | Alamo Mountains (2,525 acres) | Barbary sheep are managed to prevent habitat degradation while providing hunting opportunities for the public. | Closed to leasing |
| ACEC | Wind Mountain (2,472 acres) | Barbary sheep are managed to prevent habitat degradation while providing hunting opportunities for the public. | Closed to leasing |

SOURCE: Bureau of Land Management 1986a, 1997b
NOTE: Acres were calculated using current data in a geographic information system and may be different from the 1986 Resources Management Plan and subsequent *Federal Register* notices.

BLM currently is implementing two Habitat Management Plans (HMPs). These include the Jornada del Muerto HMP and McGregor Range Co-Use Area HMP. Several plans have been identified for preparation. These include revision of the McGregor Range Co-Use Area HMP (in three pieces) to include the Otero Mesa grasslands east of McGregor Range, Percha Creek (riparian), Caballo Mountains (deer), Sacramento Escarpment (deer), and riparian in Sierra and Otero Counties.

Management issues for wildlife in general include maintenance and restoration of desert grassland, riparian, and arroyo habitats; improvement or maintenance of big game habitats and populations (particularly on the Jornada del Muerto, Otero Mesa desert grassland area, Sacramento Escarpment, foothills of the Sacramento Mountains, Brokeoff Mountains, San Andres Mountains, and Nutt desert grassland area); and the long-term decline of grassland birds and migratory birds in general.

### 2.2.9 Special Status Species

The Endangered Species Act, as amended, requires special protection and management for Federally listed threatened and endangered species, or species proposed to be listed as threatened and endangered. BLM also manages a large number of sensitive, non-Endangered Species Act species (BLM Sensitive and U.S. Fish and Wildlife species of concern) to avoid the need for listing as Federally endangered. The purpose of this management prior to Federal listing is to use the broader range of management options available to protect a species.

Other Federal laws and regulations, such as the Bald Eagle Protection Act, and Fish and Wildlife Coordination Act also may apply.

The Las Cruces Field Office of BLM currently is implementing reasonable and prudent measures, terms and conditions, and conservation recommendations from the 1997 Section 7 consultation on the 1986 RMP for the aplomado falcon, southwestern willow flycatcher, peregrine falcon, and Sacramento prickly poppy. Operating guidelines resulting from that consultation include the following:

- conduct a programmatic consultation on fluid minerals activities in Sierra and Otero Counties
- inventory and monitor riparian areas for the presence of southwestern willow flycatchers
- manage peregrine falcon nesting habitat according to *Peregrine Habitat Management in National Forests of New Mexico* (Johnson 1994)
- implement management of designated ACECs

- # study the habitat requirements of aplomado falcons and apply the results to public land management

The FWS opinion resulting from the 1997 consultation, and BLM policy, leads the Las Cruces Field Office to consider all riparian areas, desert grasslands, and areas with endemic species to be areas of management concern for special status species. Analysis and management of these areas, particularly grasslands, should include a broad ecosystem view as well as finer detailed analysis. ACECs have been designated to manage and protect some of the species; however, many areas have no protective designations.

In addition, BLM manages several special status species areas, which are areas that have been nominated as ACECs (BLM 1999b; Dunmire 1992). BLM policy on such areas is to manage the resources for which the area was nominated until these areas can be evaluated fully through the planning process (Manual 1613.21E).

### 2.2.10 Rangeland

Livestock grazing is authorized under the Taylor Grazing Act of 1934, FLPMA of 1976, and the Public Rangelands Improvement Act of 1978. BLM is directed to authorize and manage livestock grazing on public land under the principles of multiple use and sustained yield and to prevent the degradation of the rangeland resources by providing for their orderly use, improvement, and development.

BLM's Final Grazing Management Policy was established in 1982 and is now incorporated in BLM handbook's identified goals and objectives. This policy is consistent with BLM's responsibility to improve rangelands and manage grazing use on public land in compliance with laws and policies affecting the grazing management program. The intent of the policy is to make the grazing management program more efficient and cost effective through the use of a selective management approach. This is accomplished by assigning management priorities among allotments on public land based on similar resource characteristics, management needs, and both resource and economic potential for improvement.

Additional BLM policy for the management of livestock grazing is considered in the Proposed Statewide RMPA/FEIS for New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (BLM 2000). The standards describe conditions needed for healthy sustainable public rangelands and relate to all uses of public lands. The standards provide the measure of resource quality and functioning condition upon which the public land health will be assessed. In order to measure the effectiveness of each standard in specific areas, a set of measurable indicators and associated criteria were identified for each site-specific situation. Livestock grazing guidelines include management tools, methods, strategies, and techniques designed to maintain or achieve standards. In order to bring authorized grazing into compliance with NEPA, the BLM Las Cruces Field Office is preparing environmental assessments for grazing permit renewals for each allotment in Sierra and Otero

Counties. Changes to existing grazing practices may result in attainment of the new standards for public land health, based on the need to retain the integrity of the soil and the continued sustainability of ecological processes.

There are 33 allotments in BLM's Decision Area for which Allotment Management Plans have been implemented. These allotments are on grazing systems established in cooperation with individual permittees. The schedules allow for deferment on one or more pastures for a growing season or full year. Many ranchers are now practicing some type of grazing management through these or other grazing systems.

### 2.2.11 Cultural Resources

The BLM multiple use management policy relies on FLPMA as the primary basis for managing cultural resources on public land. FLPMA establishes a general policy of protecting the quality of historical and archaeological resources. Any proponent of future leasing, exploration, and development activities would be expected to provide the cultural resource inventories and subsequent reports needed for BLM to comply with Federal historic preservation laws.

The 1986 RMP provided protection for cultural resources then determined to be particularly significant. These decisions were as listed in Table 2-4.

The RMP also indicated Cultural Resource Management Plans would be prepared for Rattlesnake Hill, Alamo Mountain, Lone Butte, Butterfield Trail, Jornada del Muerto Trail, and archaeological sites on the McGregor Range. In addition, the RMP indicated that BLM would initiate a 10 percent sample survey of public land in Sierra and Otero Counties.

Sections of the Butterfield and Jornada del Muerto trails are protected by the 1986 RMP "no-surface-disturbance" decisions (C-6 and C-7); however, additional segments of these trails have been identified and are not specifically protected. The Cooke's Trail, also known as the Mormon Battalion Trail, was not identified when the RMP was prepared, and has no protection through the RMP. Similarly, the historic townsite of Lake Valley was not considered nor afforded any protection under the 1986 RMP.

**TABLE 2-4**
**CULTURAL RESOURCE DECISIONS**

| RMP Decision | Description | Acres |
|---|---|---|
| C-1 | ORV use was limited to existing roads and trails to protect the Three Rivers Petroglyph Site and Picnic Area, and 340 acres were fenced to eliminate livestock grazing. | 1,130 |
| C-2 | Closed to ORV use and future rangeland improvements to protect the Rattlesnake Hill Archaeological District. | 889 |
| C-3 | Designated no surface occupancy and closed to ORV use to protect the Alamo Mountain petroglyphs. | 2,525 |
| C-4 | ORV use was limited to existing roads and trails within a 100-acre parcel to protect cultural resources at Lone Butte. | 352 |
| C-5 | Closed to ORV use to protect cultural resources in a portion of the Jarilla Mountains. | 803 |
| C-6 | Areas within 0.25 mile (400 meters) of well-preserved segments of the Butterfield Trail were closed to surface-disturbing activities. | 1,178 |
| C-7 | Areas within 0.25 mile (400 meters) of well-preserved segments of the Jornada del Muerto Trail were closed to surface-disturbing activities. | 4,448 |

SOURCE: Bureau of Land Management 1986a, geographic information system database 1998.
NOTE: Acres were calculated using current data in a geographic information system and may be different from the 1986 Resource Management Plan and subsequent *Federal Register* notices.

### 2.2.12 Paleontological Resources

In addition to FLPMA and NEPA, management of paleontological resources is directed by the National Historic Preservation Act of 1966 (as amended), National Natural Landmarks Program under the Historic Sites Act of 1935, and Executive Order 11593 (Protection and Enhancement of the Cultural Environment). Actions relating to the management and protection of paleontological and other resources are subject to the provisions in the NEPA Handbook H-1790-1, Section 516 DM6, Appendix 5. The BLM's objectives for paleontological resources are to manage them for their scientific, educational, and recreational values, and to mitigate adverse impacts on them (BLM Manual H-8270-1, General Procedural Guidance for Paleontological Resource Management). For future projects that may require surface disturbance, adherence to the guidelines and requirements in the General Procedural Guidance for Paleontological Resource Management document will be important to provide protection of those resources.

### 2.2.13 Recreation

The objective of the recreation program is to ensure the continued availability of quality outdoor recreation opportunities and experiences that are not readily available from other sources. Recreation programs are managed according to multiple-use principles, to protect the health and safety of the users, protect natural and cultural resource values, and promote public use and enjoyment of the public land. Management priority is given to undeveloped areas experiencing resource damage or user conflicts, or that are threatening visitor safety.

Currently, the BLM office in Washington, D.C. is developing a strategy to address the management of off-highway vehicle (OHV) use on public lands. This strategy is being developed through the summer of 2000 and will culminate in guidance provided by the Washington DC Office to the BLM Field Offices in November of 2000. This guidance will go into effect immediately; however, local implementation will vary depending on individual circumstances.

There may be a change in the terminology that is used regarding off highway travel due to the differences in the definitions. Off-road vehicles (ORVs) according to 43 CFR 8340.0-05 are vehicles capable of or designed to be driven off of roads, while the term OHV is meant to describe motor vehicles that are used off of artificially surfaced roads or trails. The use of the term OHV will help to clarify that vehicle designations apply to all vehicles traveling off of artificially surfaced roads and trails, regardless of whether those vehicles were designed to be driven off of roads.

For the purposes of this document, the use of the term ORV will be interchangeable with OHV. This will help the RMPA to remain consistent with the 1986 RMP and yet recognize that new policy is being developed that will apply to future vehicle use designations.

Public land is open for ORV use unless specifically designated for limited use or closed. BLM policy is to manage the ORV program to protect resources, promote safety, and minimize conflicts among the various uses of the land. Table 2-5 summarizes the limited or closed ORV areas.

In response to obvious increasing use of the unofficial ORV area known as Red Sands, the BLM intends to begin managing the area proactively for year-round ORV use. The trails have been inventoried for cultural resources. Mitigation is planned and an environmental assessment is being prepared for signing the trails, encouraging use of the trail system versus creation of new trails and "cross-country" use, and installing some basic visitor amenities such as a shade shelter and an informational kiosk.

**TABLE 2-5**
**ORV LIMITED AND CLOSED AREAS**

| RMP Decision | Description | Acres |
|---|---|---|
| **Areas in which ORV use is limited to existing roads and trails** | | |
| W-1 | Wind and Chess Draw watershed area | 34,499 |
| W-2 | Mocassin and Otto Draw watershed area | 13,662 |
| W-3 | Watershed area east of Tularosa and south of Tularosa River | 17,046 |
| W-4 | Three Rivers watershed area | 12,741 |
| W-5 | Watershed area east of Crow Flats | 14,890 |
| WL-2 | Percha Creek riparian area | 276 |
| C-1 | Three Rivers Petroglyph Site and Picnic Area | 1,130 |
| VR-1 | Sacramento Escarpment ACEC | 5,365 |
| C-4 | Lone Butte Area | 352 |
| VR-2 | Brokeoff Mountains VRM and ORV limited area | 11,647 |
| VR-3 | Cornudas Mountains VRM and limited ORV area | 2,533 |
| VR-4 | Cuchillo Mountains VRM and limited ORV area | 5,947 |
| **Area designated as closed to ORV use** | | |
| VR-1 | Vegetation study plot enclosures | 3,159 |
| C-2 | Rattlesnake Hill Archaeological District | 889 |
| C-3 | Alamo Mountains petroglyphs area | 2,525 |
| C-5 | Jarilla Mountains | 803 |

SOURCE: Bureau of Land Management 1986a, geographic information system database 1998
NOTE: Acres were calculated using current data in a geographic information system and may be different from acres published in the 1986 Resource Management Plan or subsequent *Federal Register* notices.

### 2.2.14 Visual Resources

The BLM Visual Resource Management (VRM) System is the basic tool for the inventory, planning, and management of visual resources in BLM's Decision Area. The primary character of each landscape should be retained, and each class within the VRM System prescribes the allowable level of modifications to remain within that guidance. Within the Planning Area, Areas of Critical Environmental Concern (ACECs), Wilderness Study Areas (WSAs), and areas along some roadways are among the

areas included within the visual classes that are more restrictive with regard to modifications in scenic quality.

Three areas are designated as "limited-ORV" areas for protection of visual resources—the Brokeoff Mountains, Cornudas Mountains area, and Cuchillo Mountains (refer to Table 2-5). The Jornada del Muerto and Butterfield Trails also are resources of visual concern. The two historic trails are partially protected by decisions in the 1986 RMP, which stipulate that no surface-disturbing activities can occur within 0.25 mile (400 meters) of either side of specific segments of the trail.

The Lake Valley Back-country Byway is a scenic and historic route in Sierra County, consisting of State Highway 152 from Interstate 25 to Hillsboro, and Highway 27 from Hillsboro to Nutt. Continuing management guidance is to protect the scenic value of the byway by minimizing visual intrusions.

### 2.2.15 Special Management Areas

The two WSAs in BLM's Decision Area—Brokeoff Mountains (30,838 acres) and Jornada Del Muerto (4,320 acres)—will continue to be managed under the Interim Management Policy Guidelines for Land Under Wilderness Review (BLM 1995) until the areas are either added to the National Wilderness Preservation System or removed from further wilderness consideration. This policy closes WSAs to Federal fluid minerals leasing. If designated as wilderness, the area will be managed under the Wilderness Management Policy (BLM 1981c). If removed from further wilderness consideration, the Brokeoff Mountains and Jornada del Muerto areas would be managed under the guidance prescribed by the RMPA for Federal fluid minerals leasing.

The BLM manages six ACECs in the Decision Area—Three Rivers Petroglyph Site (1,130 acres), Sacramento Escarpment (5,365 acres), Cornudas Mountain (861 acres), Alamo Mountain (2,525 acres), Wind Mountain (2,472 acres), and Alkali Lakes (6,903 acres). The ACECs are managed by direction provided in the Otero County ACEC RMPA (BLM 1997b). Some of the 1986 RMP decisions are superseded by the 1997 ACEC RMPA decisions including OGG-9 (changed from no surface occupancy of Sacramento Mountains ACEC to "closed"), visual designations for the ACECs, and ORV designations for the ACECs. The ACECs are closed to fluid minerals leasing.

Eight areas in BLM's Decision Area have been nominated to become ACECs (BLM 1999b; Dunmire 1992). The nominations are based primarily on the presence of special status species. Current managment of the nominated ACECs includes those reasonable measures necessary to protect significant resource values until the areas are fully evaluated through the resource management planning process. The nominated ACECs are listed below in Table 2-6 and described in Section 3.18.3.

**TABLE 2-6**
**NOMINATED ACECs**

| Nominated ACEC | Acres |
|---|---|
| Brokeoff Mountains Nominated ACEC | 3,834 |
| Caballo Mountains Nominated ACEC | 2,213 |
| Jarilla Mountains Nominated ACEC | 7,032 |
| Mud Mountain Nominated ACEC | 2,580 |
| Percha Creek Nominated ACEC | 940 |
| Sacramento Mountains Nominated ACEC | 2,381 |
| Six Shooter Canyon Nominated ACEC | 1,060 |
| Pup Canyon Nominated ACEC | 3,677 |

McGregor Range, public land withdrawn for military use, is managed by direction provided in the McGregor Range RMPA (BLM 1990a). BLM retains management responsibility for natural and cultural resources on McGregor Range. Leasing decisions for McGregor Range were made in the McGregor Range RMPA and are being carried forward unchanged.

### 2.2.16 Fire Management

Desert shrub communities have replaced grassland communities over the past 80 years in much of the area due to fire suppression and livestock grazing. Some of these desert shrub communities and the mountain ranges produce large amounts of fine fuels (e.g., grasses and shrubs). With little pressure from grazing, these areas may be susceptible to fires starting during dry thunderstorms. Under such circumstances, fires in these areas are often large and difficult to control.

At present, the fire management within the Planning Area administered by the BLM Las Cruces Field Office is in accordance with a number of existing fire management plans, as follows:

- Fort Bliss/McGregor 1st Combined Arms Support Battalion Fire Management Plan, 1997
- Interim Management Policy for Lands Under Wilderness Review, H-8550-1, 1995
- Las Cruces District Fire Management Plan, 1995
- White Sands Missile Range Catastrophic Fire Management Plan
- Gila and Lincoln National Forests Fire Management Plans
- White Sands National Monument Fire Management Plan

### 2.2.17 Hazardous Materials

The use, transport, and disposal of hazardous materials is regulated by the Resource Conservation and Recovery Act (RCRA), Emergency Planning and Community Right-to-Know Act (EPCRA), and Toxic Substances Control Act (TSCA). Most wastes generated at oil and gas production facilities are exempt from RCRA under the exploration and production exemption.

To ensure compliance, documentation for projects must include information on hazardous substances that would be used in quantities that meet or exceed the threshold planning quantities (generally 10,000 pounds or more), the quantity of each hazardous substance that would be used, and the methods of storage, transport, and disposal. Hazardous substances that must be declared are listed in the EPA's *Consolidated List of Chemicals Subject to Reporting Under Title III of the Superfund Amendment and Reauthorization Act (SARA) of 1986*. The BLM must be notified if a significant change occurs in the chemicals to be used in a proposed project.

Hazardous materials used and hazardous wastes generated at wellsites may include fuel, drilling fluids, pit sludges, and soils contaminated by exploration and production wastes. Solvents may be used on equipment, acids could be used in well stimulation, and fertilizers and herbicides could be used in reclamation. Due to the potential for spills, vehicles and equipment should be located away from streams. Any firewalls or containment dikes must be constructed and maintained around all storage facilities, and be designed to contain the full volume of the largest tank.

Any hazardous materials used and hazardous wastes generated during exploration and production must be contained prior to disposal, and disposed of at approved landfills. There are no landfills in New Mexico that accept hazardous waste, and the operator would be required to arrange for an out-of-state transfer if hazardous materials are to be generated.

## 2.3 ALTERNATIVES

NEPA, the BLM's land use planning regulations (43 CFR 1600), and BLM Handbook 1624-H require BLM to "rigorously explore and objectively evaluate all reasonable alternatives." Five alternatives were addressed. Two alternatives were considered but eliminated from further analysis, and three alternatives were developed and evaluated in detail.

### 2.3.1 Alternatives Considered but Eliminated from Further Analysis

In developing the alternatives, two were considered initially but eliminated prior to further analysis. These alternatives and the reasons for their elimination are described briefly below.

#### No New Leasing for Fluid Minerals Development

The Mineral Leasing Act gives the Secretary of the Interior discretionary authority to issue oil and gas leases. A decision for no leasing is made where it is determined that oil and gas leasing is not in the public's interest. However, the Secretary cannot be arbitrary and capricious in making such a decision. A decision for no leasing is reached only after careful consideration of conflicting resource values and uses and environmental consequences.

It is the policy of the BLM that lands generally are available for oil and gas leasing where measures can be taken to mitigate conflicts and environmental consequences to an acceptable level. Given the nature and success of such mitigation, and the mandate for multiple use of public land (FLPMA), a decision for no leasing covering all lands in the Planning Area or Decision Area would be arbitrary and capricious.

Therefore, an alternative of no leasing is unreasonable and eliminated from detailed study in this programmatic document. Rather, consideration of no leasing was analyzed in association with specific resource concerns as part of the alternatives analyzed. Where it was determined that even the most restrictive stipulation available (i.e., no surface occupancy) will not adequately mitigate conflicts or environmental consequences, so that leasing is not in the public's interest, then a decision for no leasing is considered.

**Comprehensive No Surface Occupancy**

This alternative would stipulate no surface occupancy throughout BLM's Decision Area. This would effectively limit drilling activities to directional drilling from surface area that is not administered by BLM and existing leases. Directional drilling becomes more difficult and risky the farther the surface location is from the bottom hole location, rendering large areas effectively closed to leasing. The constraint associated with this alternative would provide a level of protection to special management areas (e.g., WSAs, ACECs) consistent with the management objectives for those areas; however, as above, this alternative would stipulate no surface occupancy throughout BLM's Decision Area.

### 2.3.2 Plan Alternatives Considered

The three alternatives examined in this RMPA/EIS are (1) No-action Alternative (Existing Management), (2) Alternative A, and (3) Alternative B. The alternatives were developed to respond to issues identified through scoping, explore alternatives to the existing management situation, comply with BLM's planning guidelines for fluid mineral resources (Handbook H-1624-1), and comply with the FLPMA requirement of managing for sustained yield and multiple use on public land. The reasonable foreseeable fluid minerals development and associated amount of surface disturbance predicted for the Planning Area over the next 20 years (refer to Chapter 4 and Appendix A-IV) remains the same for each alternative. Therefore, the alternatives were formulated based on the extent of modification to the existing management situation as it applies to certain resources that were identified as concerns. It should be noted that development of existing leases would continue according to the terms of the lease.

Federal fluid mineral leasing and development may occur on lands where the surface is managed by Federal, State, or Indian agencies, or by private individuals. BLM's environmental objectives and constraints apply equally to these areas; however, such constraints are developed at the permit stage in consultation with the other surface-managing agency or the surface owner.

BLM's existing guidance prescribes objectives for managing public land and associated resources. For fluid minerals, the objectives are defined in terms of the availability of land for leasing (closed or open to leasing) and management of lands that are open to leasing (with standard terms and conditions or stipulations). A brief explanation follows and a more detailed discussion is provided in Appendix A-V.

Public land may be closed nondiscretionarily or discretionarily. A ***nondiscretionary closure*** would occur on those lands that must be closed for reasons (e.g., laws, regulations, orders) beyond the discretion of the BLM. A ***discretionary closure*** includes those lands where BLM has determined that fluid minerals leasing, even with the most restrictive stipulations, would not adequately protect other resources, values, or land uses.

Lands open for leasing may be open with no specific management decisions defined in an RMP. However, these areas are subject to the ***standard lease terms and conditions*** as defined on the lease form. Or, lands open for leasing may be managed with constraints in the form of stipulations, which are provisions that modify the standard lease rights, conditions included in a lease when environmental and planning analyses have demonstrated that additional and more stringent environmental protection is needed. The three types of lease stipulations are (1) ***no surface occupancy***, (2) ***controlled surface use***, and (3) ***timing limitation***. A stipulation of ***no surface occupancy***, as implied, does not allow the surface of a given area to be occupied. A stipulation of ***controlled surface use*** is used to identify constraints on surface use or operations that may otherwise exceed the mitigation provided by the standard lease terms and conditions and the regulations and operating orders. A stipulation of ***timing limitation*** prohibits fluid minerals activities for a specific period of time less than one year. Under certain conditions, BLM may grant waivers, exceptions, or modifications (Appendix A-V).

The three alternatives are distinguished by the type and degree of constraints. The No-action Alternative represents continued implementation of existing management plans, policies, and decisions. Compliance with laws and regulations would continue on a case-by-case basis. The other two alternatives represent modifications to existing management. Alternatives A and B address existing legislative and regulatory requirements at a programmatic level, and/or place constraints if resource values are determined to be sufficiently high or protections are justified in the public interest.

It should be noted that a number of the resource concerns occur, or cluster, in certain geographic areas as listed in Table 2-7. The areas of some of these resource concerns overlap. In those cases, the more restrictive stipulation is dominant and will serve as the management direction. For example, in the Sacramento Mountains, under Alternative A, the area of the Sacramento Escarpment ACEC, which is discretionarily closed to leasing, overlaps with the Sacramento Mountains Deer Area, which has a stipulation of controlled surface use. Where the area of discretionary closure overlaps with the area of controlled surface use, the area would be discretionarily closed to leasing.

Each alternative is generally described below. Table 2-8, at the end of this chapter, is a summary of leasing constraints by alternative. Table 2-9, also at the end of this chapter, is a summary of the plan alternatives considered listing the resource categories and concerns and the constraints applied for each alternative. Maps 2-1, 2-2, and 2-3 illustrate the management objectives for each alternative. Those public land resources not addressed in the text, tables, or maps would continue to be managed as outlined in the section of this chapter that addresses continuing management guidance.

**TABLE 2-7**
**GEOGRAPHIC AREAS WITH MULTIPLE RESOURCE CONCERNS**

| Geographic Area | Resource Concerns |
|---|---|
| Cuchillo Mountains | # Cuchillo Mountains limited ORV area<br># Cuchillo Mountains Piñon Nut Collection Area |
| Caballo Mountains | # Caballo Mountains Communication Site<br># Caballo Mountains Deer Area<br># Caballo Mountains Nominated ACEC<br># Potential bighorn sheep habitat |
| Sacramento Mountains | # Sacramento Mountains Deer Area<br># Sacramento Escarpment ACEC<br># Sacramento Mountains Nominated ACEC<br># Potential bighorn sheep habitat |
| Percha Creek | # Southwestern willow flycatcher<br># Riparian habitat<br># Percha Creek Riparian Habitat Area<br># Percha Creek Nominated ACEC |
| Jarilla Mountains | # Jarilla Mountains ORV closed area<br># Jarilla Mountains Nominated ACEC |
| Cornudas Mountains | # Wind and Chess Draw Watershed Area<br># Cornudas, Alamo, and Wind Mountains ACECs<br># Cornudas Mountains limited ORV area<br># Potential bighorn sheep habitat |
| Otero Mesa | # Alamo Mountains ACEC<br># Otero Mesa Habitat Area<br># Potential aplomado falcon range |
| Brokeoff Mountains | # Brokeoff MountainsWSA<br># Brokeoff Mountains VRM and ORV area<br># Brokeoff Mountains Nominated ACEC<br># Potential bighorn sheep habitat |

**No-action Alternative (Existing Management)**

For this alternative, existing decisions and policy would remain in effect (Map 2-1). Leasing and development of fluid minerals would continue as specified in the existing RMP and RMPAs for this area. BLM would continue to implement standard lease terms and conditions to conduct operations in a manner that would minimize adverse impacts on resources, land uses, and users. Lease issuance and development of leases would continue to be considered on a case-by-case basis. In general, the constraints applied to meet existing management objectives of the No-action Alternative are summarized below. The categories listed below correspond to those in Table 2-9.

- Lands and Access—Land restrictions on leasing that were imposed in the RMP and subsequent RMPAs would be continued.

- Watersheds and Water Resources—Areas of highly erosive or fragile soils, riparian/other wetlands/playas, and watershed management areas would continue to be open to leasing with standard lease terms and conditions.
- Vegetation—Ecological study plots generally would continue to require no surface occupancy.

- Wildlife and Special Status Species—Designated habitat areas, crucial habitat, and special status species would continue to be managed as open to leasing with standard lease terms and conditions. The exception would be the Sacramento Mountains Deer Area, a portion of which coincides with the Sacramento Escarpment ACEC, which is discretionarily closed to leasing.

- Cultural Resources—Generally, cultural resource areas would continue to be open to leasing with standard lease terms and conditions. The exceptions are the Rattlesnake Hill Archaeological District, which has a stipulation of no surface occupancy, and two historic trails (Butterfield and Jornada del Muerto), which have stipulations of controlled surface use.

- Recreation and Visual Resources—Recreation areas and visual resources would continue to be managed as open to leasing with standard lease terms and conditions. The exceptions are certain areas along the Tularosa River, which have a stipulation of no surface occupancy, and areas designated as VRM Class I, which coincide with the six ACECs and, therefore, are discretionarily closed to leasing per the 1997 RMPA.

- Special Management Areas—WSAs are closed nondiscretionarily. If these WSAs were dropped from wilderness considerations by Congress and were not assigned other special status designations, they would be open to leasing with standard lease terms and conditions. ACECs are closed to leasing per the 1997 RMPA. Nominated ACECs currently are managed under standard lease terms and conditions.

**Alternative A**

The objective of Alternative A is to modify the existing management situation to respond to legislative or regulatory requirements and/or management objectives that otherwise would be achieved on a case-by-case basis under the No-action Alternative (existing management). In doing so, the major issues addressed include potential soil erosion, increasing protection of cultural resources sites, increasing protection of desert grassland habitat from fragmentation, and increasing protection of special status species and visual resources.

The departure that Alternative A makes from the No-action Alternative is summarized as follows:

- Land and Access—Management objectives would remain the same as the No-action Alternative with two exceptions. The Caballo Mountain Communication Site would be open to leasing with standard lease terms and conditions rather than the more restrictive stipulation of no surface occupancy. Community Pit 7 would have a stipulation of no surface occupancy to protect its public and resource values.

- Watersheds and Water Resources—Areas of highly erosive or fragile soils, and watersheds would be managed as open to leasing with a stipulation of controlled surface use, and riparian/other wetlands/playas would be managed as open to leasing but with no surface occupancy within 0.25 mile (400 meters).

- Vegetation—Management objectives would remain the same as the No-action Alternative.

- Wildlife and Special Status Species—Designated habitat areas and special status species areas would be managed as open to leasing with stipulations of controlled surface use. An exception to this is the Nutt and Otero Mesa desert grassland habitat areas, which would be managed as open to leasing with a stipulation of no surface occupancy except within 492 feet (150 meters) of roads in order to limit further fragmentation of that habitat. Also, Percha Creek Riparian Habitat Area which would be managed as open to leasing with a stipulation of no surface occupancy. Habitat suitable for bighorn sheep would be managed as open for leasing with a stipulation for controlled surface use and timing limitations (except where habitat of the Sacramento Mountains overlaps with the Sacramento Escarpment ACEC). The portion of the Sacramento Mountains Deer Area that coincides with the Sacramento Escarpment ACEC would continue to be closed discretionarily. Crucial habitat would continue to be managed under standard lease terms and conditions.

- Cultural Resources—Protective constraints would increase. The Jarilla Mountains and three historic trails would be managed as open to leasing with stipulations of controlled surface use. Lake Valley Historic Townsite and Lone Butte would be managed as open to leasing with a stipulation of no surface occupancy. Rattlesnake Hill Archaeological District would be

discretionarily closed to leasing and areas surrounding the Rattlesnake Hill Archaeological District would be managed as open to leasing with a stipulation of no surface occupancy.

- Recreation and Visual Resources—Protective constraints would increase for several resource areas. VRM Class II areas, Cornudas Mountains, Cuchillo Mountains, Cuchillo Mountains Piñon Nut Collection Area, Brokeoff Mountains VRM and ORV limited area, and Lake Valley Back-country Byway would be managed as open to leasing with controlled surface use, and the Red Sands ORV Area would be managed as open to leasing with a stipulation of timing limitation. Management objectives would remain the same as the No-action Alternative for areas along the Tularosa River (no surface occupancy), and VRM Class I areas (discretionary closures), VRM Classes III and IV (standard lease terms and conditions).

- Special Management Areas—WSAs would remain nondiscretionarily closed to leasing. If these WSAs were dropped by Congress from wilderness considerations, they would be leased with stipulations of controlled surface use. ACECs would remain discretionarily closed to leasing. Nominated ACECs would be open to leasing with a stipulation for controlled surface use.

**Alternative B**

Alternative B would accomplish the same objectives as Alternative A, but would provide a relatively greater emphasis on resource protection by imposing more constraints on fluid minerals leasing and development.

As with the other alternatives, development of existing leases would continue according to the terms of the lease. BLM would consult with the lessees to implement management constraints on existing leases or require protective measures as conditions of approval of APDs.

The departure that Alternative B makes from the other alternatives is summarized by resource concerns as follows:

- Lands and Access—Management objectives would be the same as Alternative A.

- Watersheds and Water Resources—Areas of highly erosive or fragile soils would be managed as open to leasing with a stipulation of controlled surface use. Riparian/other wetland/playa areas would be managed as open to leasing with a stipulation of no surface occupancy within 0.5 mile (800 meters). Watershed areas would be discretionarily closed to leasing (and no geophysical exploration would be allowed).

- Vegetation—Management objectives would remain the same as the No-action Alternative and Alternative A.

- Wildlife and Special Status Species—Percha Creek Riparian Habitat Area and occupied or essential habitat of special status species would be discretionarily closed to leasing. Also, the portion of the Sacramento Mountains Deer Area that coincides with the Sacramento Escarpment ACEC would be discretionarily closed. The Nutt and Otero Mesa desert grassland habitat areas would be managed as open to leasing with a stipulation of no surface occupancy except within 492 feet (150 meters) of roads in order to limit further fragmentation. Designated big game habitat areas would be managed as open to leasing with a stipulation for controlled surface use. Potential habitat of bighorn sheep would be managed as open to leasing with stipulations of controlled surface use and timing limitation. Crucial habitat would be managed under standard lease terms and conditions.

- Cultural Resources—Lone Butte would be managed as open to leasing with a stipulation of no surface occupancy (as for Alternative A). Protective constraints for other cultural resources would increase including Lake Valley Historic Townsite (discretionary closure), Jarilla Mountains (discretionary closure), Rattlesnake Hill Archaeological District (discretionary closure of District and adjacent areas), and three historic trails (Mormon Battalion, Butterfield, and Jornado del Muerto, no surface occupancy).

- Recreation and Visual Resources—Protective constraints would increase for several resources. Areas along the Tularosa River; Red Sands ORV Area; VRM Class II areas; Cuchillo Mountains Piñon Nut Collection Area; Cornudas Mountains, Cuchillo Mountains; and Brokeoff Mountains VRM and ORV limited area, and Lake Valley Back-country Byway would be discretionarily closed to leasing. VRM Class III areas would be managed as open to leasing with controlled surface use. VRM Class I areas would continue to be discretionarily closed and VRM Class IV areas would remain open to leasing with standard lease terms and conditions .

- Special Management Areas—WSAs would be closed nondiscretionarily. If these WSAs were dropped by Congress from wilderness considerations, they would be closed discretionarily. ACECs would remain discretionarily closed to leasing and nominated ACECs would be discretionally closed to leasing.

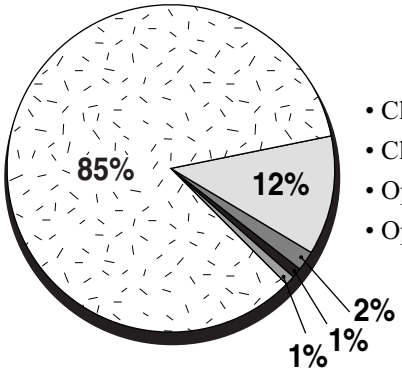
## 2.4 COMPARISON OF ALTERNATIVES

Since the three alternatives are distinguished primarily by type and degree of constraints, areas associated with the various constraints of each alternative are compared in Table 2-10. Table S-2, Summary of Impacts, summarizes the potential impacts estimated for each alternative. Also, Figure 2-1 illustrates the percentages of areas closed or open to leasing within BLM's Decision Area. Also, refer to Maps 2-1, 2-2, and 2-3.

# FIGURE 2-1
# MANAGEMENT GUIDANCE IN DECISION AREA BY ALTERNATIVE

## No-action Alternative

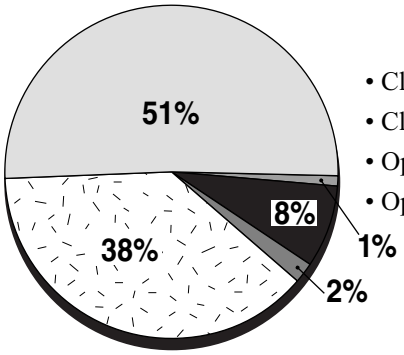
• Open with standard lease terms and conditions: 1,745,500 acres (85%)




• Closed nondiscretionarily: 46,047 acres (2%)
• Closed discretionarily: 17,673 acres (<1%)
• Open with no surface occupancy: 4,281 acres (<1%)
• Open with other stipulations: 239,503 acres (12%)

## Alternative A

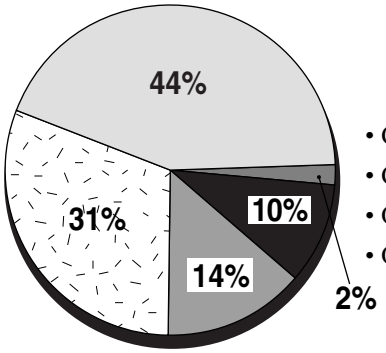
• Open with standard lease terms and conditions: 779,093 acres (38%)




• Closed nondiscretionarily: 46,047 acres (2%)
• Closed discretionarily: 18,557 acres (<1%)
• Open with no surface occupancy: 160,435 acres (8%)
• Open with other stipulations: 1,048,872 acres (51%)

## Alternative B

• Open with standard lease terms and conditions: 632,228 acres (31%)




• Closed nondiscretionarily: 46,047 acres (2%)
• Closed discretionarily: 279,108 acres (14%)
• Open with no surface occupancy: 201,809 acres (10%)
• Open with other stipulations: 893,813 acres (44%)

**TABLE 2-10**
**MANAGEMENT GUIDANCE IN DECISION AREA BY ALTERNATIVE**
**(approximate acres)**

| Constraints | No-action Alternative | Alternative A | Alternative B |
|---|---|---|---|
| **Closed to Leasing** | | | |
| Nondiscretionary closure | 46,047 | 46,047 | 46,047 |
| Discretionary closure | 17,673 | 18,557 | 279,108 |
| *Total closed to leasing* | *63,720* | *64,604* | *325,155* |
| **Open to Leasing** | | | |
| No surface occupancy | 4,281 | 160,435 | 201,809 |
| Controlled surface use and timing limitation | 0 | 162,497 | 80,248 |
| Controlled surface use | 2,915 | 856,162 | 812,984 |
| Timing limitation | 236,588 | 30,213 | 581 |
| (Total open with other constraints[1]) | (243,784) | (1,209,307) | (1,095,622) |
| Standard lease terms and conditions | 1,745,500 | 779,093 | 632,228 |
| *Total open to leasing* | *1,989,248* | *1,988,400* | *1,727,850* |

SOURCE: Bureau of Land Management database 1999
NOTES: [1]Includes the constraint categories of controlled surface use and timing limitation, controlled surface use, and timing limitation, but not the category of no surface occupancy.

Under all alternatives, certain lands are closed to leasing. The number of acres of public land nondiscretionarily closed to leasing remain constant under all three alternatives. These closures total approximately 46,047 acres (about 2 percent). The amount of land discretionarily closed to leasing increases from less than 1 percent under the No-action Alternative and Alternative A to about 14 percent under Alternative B.

Under the No-action Alternative, and fluid minerals leasing and development would continue under existing management direction. A substantial amount of land open to leasing could be leased with standard lease terms and conditions—about 85 percent. Less than 1 percent could be leased with a stipulation of no surface occupancy and about 12 percent could be leased with stipulations for controlled surface use or timing limitation. However, to ensure compliance with applicable regulations, potential impacts would have to be identified on a case-by-case basis at the time of the APD and measures to mitigate potential impacts would have to be determined and applied as conditions of approval. Assuming that the lessee/operator would conform to the conditions of approval and other requirements (refer to Appendices A-I and A-III), impacts on resource concerns are not anticipated to be significant (except possibly visual resources) and industry would have the ability to achieve the reasonable foreseeable development (RFD). However, the lack of management direction that would result from this alternative may affect lessees in terms of the efficiency of the leasing and APD approval processes.

Alternative A incorporates legislative and regulatory requirements and/or management objectives that likely would be specified on a case-by-case basis under existing management (No-action Alternative). The amount of lands discretionarily closed to leasing would increase to 18,351 acres (less than 1 percent). The amount of land open to leasing with a stipulation of no surface occupancy would increase

to 160,435 acres, or about 8 percent. The amount of land that could be leased with standard lease terms and conditions would decrease to 779,093acres (38 percent). The greatest increase would be in the amount of lands open to leasing with other constraints (i.e., controlled surface use, timing limitation, or both), which would be approximately 1,048,872 acres (51 percent).

While this alternative represents an increase in constraints beyond the existing management situation (No-action Alternative), Alternative A allows for implementing the least restrictive constraints that would provide adequate resource protection while allowing fluid minerals leasing and development to occur. Given the levels of potential for fluid minerals development, the constraints under this alternative are not anticipated to affect the ability to explore for and develop fluid mineral resources and achieve the RFD. Alternative A consolidates the requirements and objectives at this programmatic level, which would clarify the leasing process for both industry and BLM, and would streamline the NEPA process for site-specific actions. As with the No-action Alternative, impacts on resource concerns are not anticipated to be significant (except possibly visual resources) assuming that the lessee/operator would conform to the conditions of approval and other requirements (refer to Appendices A-I and A-III).

Alternative B provides for greater protection of resource concerns. The increase in protection is most evident in the amount of lands discretionarily closed, which would increase to approximately 279,108 acres (14 percent) of the Decision Area land. The amount of land open to leasing with a stipulation of no surface occupancy would increase to approximately 201,809 acres (10 percent). The amount of land open to leasing with other constraints (i.e., controlled surface use, timing limitation, or both) would be approximately 893,813 acres (44 percent). The amount of land that could be leased with standard lease terms and conditions would decrease to approximately 632,228 acres (about 31 percent). As with the No-action Alternative and Alternative A, impacts on resource concerns resulting from fluid minerals development are not anticipated to be significant assuming that the lessee/operator would conform with conditions of approval and other requirements (refer to Appendices A-I and A-III).

While providing more protection for resource concerns than the No-action Alternative and Alternative A, the increased amount of land closed to leasing in Alternative B would limit the spatial area in which to explore for and develop fluid minerals in certain locales. This potentially could reduce the opportunity and/or increase the cost to achieve the RFD estimated for oil and gas.

Also, public lands would be closed in areas of high potential for geothermal resources; however, since most geothermal resources are developed in proximity to population areas (not on public land), it is not anticipated that these discretionary closures would have an effect on the ability to achieve the RFD for geothermal resources.

BLM's preferred alternative is Alternative A. Implementation of Alternative A would satisfy the requirement to establish fluid mineral determinations (Chapter 1). That is, public lands available for leasing are identified as well as how those lands and associated resources would be managed to

adequately protect resource values (Appendix A-VI) while sustaining the ability for the fluid minerals industry to achieve the RFD and fulfilling the policy of multiple use and sustained yield of public lands as directed under FLPMA. Based on the results of the public review and comment on this Draft RMPA/EIS, the Las Cruces Field Manager will recommend and the BLM State Director will select an alternative or a combination of alternatives to be the proposed RMPA and publish it along with the Final EIS. A final decision will be made after a 60-day Governor's Consistency Review and a 30-day protest period. A Record of Decision (ROD) and approved RMPA then will be published.

**TABLE 2-8**
**SUMMARY OF LEASING CONSTRAINTS IN DECISION AREA BY ALTERNATIVE**

| Constraint | Alternatives | | |
|---|---|---|---|
| | **No-action Alternative (Existing Management)** | **Alternative A** | **Alternative B** |
| **Closed to Leasing** | | | |
| Nondiscretionary Closure | # Old Air Force bombing and gunnery range<br># Public water reserves<br># Air navigation site<br># Wilderness Study Areas (WSAs) | # Old Air Force bombing and gunnery range<br># Public water reserves<br># Air navigation site<br># WSAs | # Old Air Force bombing and gunnery range<br># Public water reserves<br># Air navigation site<br># WSAs |
| Discretionary Closure | # Visual Resource Management (VRM) Class I<br># Areas of Critical Environmental Concern (ACECs, 6) | # Rattlesnake Hill Archaeological District<br># VRM Class I<br># ACECs (6) | # Watershed areas (5)<br># Special status species habitats<br># Percha Creek Riparian Habitat Area<br># Lake Valley Historic Townsite<br># Rattlesnake Hill Archaeological District<br># Jarilla Mountains<br># Tularosa River<br># Red Sands Off-road Vehicle (ORV) Area<br># VRM Classes I and II<br># VRM and ORV limited areas<br># Cuchillo Mountains Piñon Nut Collection Area<br># Lake Valley Back-country Byway<br># ACECs (6)<br># Nominated ACECs |

**TABLE 2-8**
**SUMMARY OF LEASING CONSTRAINTS IN DECISION AREA BY ALTERNATIVE**

| Constraint | Alternatives | | |
|---|---|---|---|
| | **No-action Alternative (Existing Management)** | **Alternative A** | **Alternative B** |
| **Open for Leasing** | | | |
| No Surface Occupancy | # Caballo Mountain Communication Site<br># Recreation and Public Purpose (R&PPs) patents and leases<br># Ecological study plots (6)<br># Rattlesnake Hill Archaeological District<br># Tularosa River | # R&PPs<br># Community Pit 7<br># Riparian/Other Wetlands/Playas<br># Nutt and Otero Mesa desert grassland habitat areas<br># Ecological study plots (6)<br># Percha Creek Riparian Habitat Area<br># Lake Valley Historic Townsite<br># Lone Butte<br># Tularosa River | # R&PPs<br># Community Pit 7<br># Riparian/Other Wetland/Playas<br># Nutt and Otero Mesa desert grassland habitat areas<br># Ecological study plots (6)<br># Black-tailed prairie dog habitat<br># Lone Butte<br># Mormon Battalion Trail<br># Butterfield Trail<br># Jornada del Muerto Trail |
| Controlled Surface Use and Timing Limitation | # None | # Bighorn sheep habitat | # Bighorn sheep habitat |

**TABLE 2-8**
**SUMMARY OF LEASING CONSTRAINTS IN DECISION AREA BY ALTERNATIVE**

| Constraint | Alternatives | | |
|---|---|---|---|
| | **No-action Alternative (Existing Management)** | **Alternative A** | **Alternative B** |
| Controlled Surface Use | # Butterfield Trail<br># Jornada del Muerto Trail | # Berrendo Administrative Camp Site<br># Highly erosive and fragile soils<br># Watershed areas (5)<br># Big Game Habitat Areas<br># Special status species habitats<br># Jarilla Mountains<br># Mormon Battalion Trail<br># Butterfield Trail<br># Jornada del Muerto Trail<br># VRM Class II<br># VRM and ORV limited areas<br># Cuchillo Mountains Piñon Nut Collection Area<br># Lake Valley Back-country Byway<br># Nominated ACECs | # Berrendo Administrative Camp Site<br># Highly erosive and fragile soils<br># Big Game Habitat Areas<br># VRM Class III |
| Timing Limitation | # White Sands Missile Range Safety Evacuation Area | # White Sands Missile Range Safety Evacuation Area<br># Red Sands ORV Area | # White Sands Missile Range Safety Evacuation Area |

NOTE: The areas of some of these resource concerns overlap. In those cases, the more restrictive stipulation is dominant and will serve as the management direction.

**TABLE 2-9**
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern | No Action | Alternative A | Alternative B |
|---|---|---|---|
| **Lands and Access** | | | |
| White Sands Missile Range Safety Evacuation Zone (Map 3-2) | TL | TL | TL |
| Old Air Force boming and gunnery range (Map 3-2) | NC | NC | NC |
| Caballo Mountain Communication Sie (Map 3-2) | NSO | SLTC | SLTC |
| Recreation and Public Purposes Leases and Patents | NSO | NSO | NSO |
| Public Water Reserves | NC | NC | NC |
| Community Pit 7 | SLTC | NSO | NSO |
| Air Navigation site | NC | NC | NC |
| Berrendo Administrative Camp Site | SLTC | CSU | DC |
| **Watersheds and Water Resources** | | | |
| Highly erosive and fragile soils (Map 3-5) | SLTC | CSU | CSU |
| Riparian/Wetlands/Playas (Map 3-7) | SLTC | NSO | NSO |
| Watershed Areas (Map 3-5) | SLTC | CSU | DC |
| Ecological Study Plots (Map 3-7) | NSO | NSO | NSO |
| **Wildlife and Special Status Species** | | | |
| Big game habitat areas (Map 3-7) | SLTC | CSU | CSU |
| Crucial habitats (Map 3-7) | SLTC | CSU | CSU |
| Nutt and Otero Mesa desert grassland habitat areas (Map 3-7) | SLTC | NSO | NSO |
| Special status species habitats (Map 3-8) | SLTC | CSU | DC |
| Habitat suitable for bighorn sheep (Map 3-7) | SLTC | CSU | DC |
| Percha Creek Riparian Habitat Area (Map 3-8) | SLTC | NSO | DC |
| **Cutural Resources** | | | |
| Lake Valley Historic Townsite (Map 3-10) | SLTC | NSO | DC |
| Rattlesnake Hill District (Map 3-10) | NSO | DC | DC |
| Lone Butte (Map 3-10) | SLTC | NSO | NSO |
| Jarilla Mountains (Map 3-10) | SLTC | CSU | DC |
| Mormon Battalion Trail (Maps 3-9 and 3-10) | SLTC | CSU | CSU |

**TABLE 2-9**
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern | No Action | Alternative A | Alternative B |
|---|---|---|---|
| Butterfield and Jornada del Muerto Trails (Maps 3-9 and 3-10) | CSU | CSU | NSO |
| **Recreation and Visual Resources** | | | |
| Tularosa River (Map 3-10) | NSO | NSO | DC |
| Red Sands ORV Area (Map 3-10) | SLTC | TL | DC |
| VRM Class I (Map 3-9) | DC | DC | DC |
| VRM Class II (Map 3-9) | SLTC | CSU | DC |
| VRM Class III (Map 3-9) | SLTC | SLTC | CSU |
| VRM Class IV (Map 3-9) | SLTC | SLTC | SLTC |
| VRM and ORV limited areas (Map 3-10) | SLTC | CSU | DC |
| Cuchillo Mountains Piñon Nut Collection Area (Map 3-10) | SLTC | CSU | DC |
| Lake Valley Back-country Byway (Map 3-10) | SLTC | CSU | DC |
| Wilderness Study Areas (3-10) | NC | NC | NC |
| Areas of Critical Environmental Concern (ACECs) (Map 3-10) | DC | DC | DC |
| Nominated ACECs (Maps 3-8 and 3-10) | SLTC | CSU | DC |

NOTES: NC = Nondiscretionary closure
DC = Discretionary closure
NSO = No surface occupancy
CSU = Controlled surface use
TL = Timing limitation
SLTC = Standard lease terms and conditions